Finfish health protection regulations in Canada

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Summary: The Fish Health Protection Regulations (FHPFR) in Canada were implemented under the Fisheries Act in 1977. These Regulations are based on the principle of controlling the movement of fish and eggs carrying infectious diseases of concern. Source facilities require a history of inspections to demonstrate the absence of named diseases and disease agents.

Since the FHPFR were implemented, no disease agents of concern are known to have been transferred with egg and fish shipments approved under these Regulations. Changes to the Regulations are needed, however, for the following reasons:

- to incorporate new knowledge on salmonid diseases and their distribution
- to cover transfers of other finfish species which present a risk of introducing or spreading infectious disease agents to Canada or between provinces
- to eliminate unnecessary controls
- to specify the new authorities needed to protect effectively the health of fisheries resources
- to reflect emerging international standards.

The author describes the authority, administration, requirements and procedures for the current FHPFR and the corresponding 'Manual of Compliance', and the proposed amendments to the Regulations and Manual.

Issues related to fish health protection in Canada are discussed, including the following:

- industry concerns with the FHPFR
- the need for quality assurance/quality control guidelines for diagnostic laboratories
- consistency with international trade standards
- the need to consider genetic and ecological factors, as well as fish health, when assessing impacts of introductions and transfers.

KEYWORDS: Canada – Finfish – Health protection – Regulations.

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INTRODUCTION

The Federal Department of Fisheries and Oceans (DFO) is responsible, under the Fisheries Act (4), for protecting fisheries resources in Canada. Under this mandate, the DFO implemented the Fish Health Protection Regulations (FHPR) in 1977, and provided a Manual of Compliance with guidelines for producers, descriptions of the roles of inspecting officials and administrative officers, and diagnostic procedures (1).

The 1977 FHPR focused exclusively on salmonid species. At that time, fisheries administrators considered that the greatest risks of introducing diseases to economically valuable fisheries resources were presented by the importation and interprovincial transfer of salmonids for both government resource enhancement programmes and the emerging aquaculture industry.

The basic principle applied in the FHPR was to control the movement of fish and eggs carrying infectious diseases of concern. Importation and interprovincial transfer of live salmonid eggs and fish, and dead cultured fish, were permitted only from sources which had a history of inspections that demonstrated the absence of specified disease agents.

The Manual of Compliance was reviewed and updated in 1984. Minor amendments to the FHPR were made in 1987 and 1992 (3). The first amendment, transferring Renibacterium salmoninarum (the causal agent of bacterial kidney disease [BKD]) from Schedule II to Schedule IV, meant that live eggs or fish could be imported to Canada or transferred between provinces even if BKD was detected at the source facility. The second amendment, in 1992, excluded eviscerated cultured fish from the provisions of the FHPR, in view of the low risk of introducing fish disease agents from eviscerated fish to Canadian waters.

In 1990, the DFO commenced a review and update of the FHPR and the Manual of Compliance. The aims were as follows:

- to incorporate new knowledge on salmonid diseases and their distribution
- to cover transfers of other finfish species which presented a risk of introducing or spreading infectious disease agents
- to eliminate unnecessary controls
- to specify new authorities required to protect effectively the health of fisheries resources
- to reflect emerging international standards.

Draft amendments were prepared and circulated widely for comment in January 1994. Some key issues still need to be resolved before the amendments are finalized.

Proposals for shellfish health protection regulations are also being prepared, but are expected to be introduced after the finfish regulations have been revised.

The requirements and procedures under the current FHPR (essentially the same as the Regulations implemented in 1977) are outlined below, together with a review of the proposed changes to be introduced in the amended Regulations and Manual of Compliance, and a discussion of issues related to fish health protection regulations in Canada.
CURRENT FISH HEALTH PROTECTION REGULATIONS

Authority

Fish health protection in Canada is a federal responsibility (6), under the Fisheries Act. The DFO administers the Fisheries Act to conserve and protect fisheries resources. The FHPR were promulgated under Section 43(b) of the Fisheries Act.

Administration

Local Fish Health Officers are appointed by the Minister of the DFO to administer the FHPR on a province-by-province basis. Local Fish Health Officers are representatives of federal or provincial agencies responsible for the management of salmonid fisheries. The responsibilities of Local Fish Health Officers are to issue Import Permits for shipments of eggs or fish into a province, taking into account the health needs of the region.

Fish Health Officials are appointed by the Minister of the DFO to inspect facilities, and are responsible for issuing Fish Health Certificates for production facilities or wild broodstock. Fish Health Officials are appointed, not by affiliation, but on the basis of education, experience, and the availability of appropriate disease diagnostic facilities. They may practise in government agencies or the private sector in Canada or other countries. To date, 161 Fish Health Officials have been appointed in fifteen countries.

The administrative centre for the FHPR is the National Registry of Fish Diseases, as described in the Manual of Compliance. The National Registry, located in the DFO headquarters in Ottawa, serves as the primary contact point for enquiries and interpretations regarding the FHPR, as well as a data centre for the documentation and dissemination of information on fish diseases in Canada.

Procedures and requirements

Regulations

The FHPR apply to all fish species of the family Salmonidae (salmon, trout, charr, grayling, Taimen, lenok, inconnu, ayu and white fish). For these species, the Regulations cover shipments of live eggs and fish of cultured species, eggs of wild broodstock, and non-eviscerated dead cultured fish.

Sources which export live eggs and fish to Canada or between provinces must be inspected for diseases/disease agents listed in Schedule II of the FHPR, including the following:

- viral haemorrhagic septicaemia (VHS; caused by VHS virus [VHSV])
- infectious haematopoietic necrosis (IHN; caused by IHN virus [IHNV])
- infectious pancreatic necrosis (IPN; caused by IPN virus [IPNV])
- any other filterable replicating virus causing cytopathogenic effects (CPE)
- whirling disease (caused by Myxobolus cerebralis)
- ceratomyxosis (caused by Ceratomyxa shasta)
- furunculosis (caused by Aeromonas salmonicida)
- enteric redmouth disease (ERM; caused by Yersinia ruckeri).
Fish Health Certificates issued for sources of live fish must also record whether any of the diseases listed in Schedule IV of the FHPR have been detected, including myxobacterial infections, motile aeromonad septicaemia, pseudomonad septicaemia, vibriosis and BKD.

Sources of non-eviscerated cultured fish must be inspected for diseases or disease agents listed in Schedule III of the FHPR, including the following:

- VHSV
- whirling disease (caused by *Myxobolus cerebralis*).

Applicants wishing to import salmonids from another country or province must obtain an Import Permit from a Local Fish Health Officer in the receiving province. The Local Fish Health Officer issues an Import Permit if the source facility has a valid Fish Health Certificate, and if there is no perceived health risk to fisheries resources in the province.

Eggs and fish can only be imported to Canada or transferred between provinces from sources which have been issued a Fish Health Certificate by a Fish Health Official. Sources must be inspected in accordance with approved procedures described in the Manual of Compliance, and must be found to be free from all diseases or disease agents listed in Schedule II (for sources of live eggs and fish) or Schedule III (for sources of non-eviscerated cultured fish). Fish Health Officials must also certify that no fish have been imported to a facility from a ‘non-certified’ source within the two years immediately preceding the date of issuance of the Fish Health Certificate.

*Manual of Compliance*

To obtain a Fish Health Certificate, four consecutive inspections – at approximately six-monthly intervals – must show a clean bill of health (as described above). New facilities which use a water supply inaccessible to fish, and which import stocks only from ‘certified’ facilities, require only one clear inspection to obtain a Fish Health Certificate. To maintain ‘certified’ status, a facility must be inspected twice-yearly (at approximately six-monthly intervals), and no stocks may be introduced from ‘non-certified’ sources.

The *Manual of Compliance* to the Regulations provides detailed procedures for Fish Health Officials, including procedures for sampling cultured and wild broodstock, transportation and treatment of samples, and detection of the bacteria, viruses and parasites listed in Schedules II, III and IV of the FHPR. The *Manual* also contains a recommended procedure for disinfection of green (newly-fertilized) or eyed salmonid eggs.

**PROPOSED AMENDMENTS TO THE FISH HEALTH PROTECTION REGULATIONS**

It is important to note that the proposed amendments discussed below are still being developed, and that they have not been approved for implementation. However, many of the proposals have been agreed to in principle by client groups.
Authority

The FHPR would continue to be national in scope, and to be promulgated under the Fisheries Act.

Administration

The responsibilities of Local Fish Health Officers for administering the FHPR, and those of Fish Health Officials for inspecting sources of eggs and fish and issuing health status reports, would not be changed.

The Minister of the DFO and Departmental Regional Directors-General would have new responsibilities under the proposed FHPR. The Minister could prohibit the importation of fish from any area, in order to address a new disease threat which is not covered under the existing Regulations, and could specify conditions for Import Licences (called Import Permits in the current FHPR). Regional Directors-General would have the authority to request samples of fish from Canadian facilities for disease testing, and to order the quarantine or isolation of fish and the eradication of disease. The new responsibilities described for the Minister and Regional Directors-General are intended to deal with unusual or emergency situations, not with routine shipments of eggs and fish.

Additional support for the administration of the FHPR could be provided by a National Registrar, together with a Technical Committee and a National Administration Committee. The National Registrar would be responsible for administering the FHPR, operating the National Registry of Fish Diseases, revising Regulations and the Manual of Compliance, establishing boards to review appeals concerning rejected applications to import eggs and fish, and coordinating emergency actions to control or eradicate disease outbreaks. The Technical Committee would assist the National Registrar by providing advice on technical procedures related to the FHPR and the Manual of Compliance. The National Administrative Committee would meet periodically to discuss matters related to compliance with and administration of the FHPR.

Procedures and requirements

Regulations

The FHPR would apply to all species of finfish imported to Canada, including fish intended for release into the natural environment (e.g. salmonid enhancement, baitfish), for holding or rearing in aquaculture facilities, for display or breeding in aquaria (e.g. tropical fish), or for human consumption. The only exception would be live eggs or fish imported for bioassays or research, held in quarantine facilities and destroyed once research is completed. Importation of fish for bioassays and research would be controlled through a separate procedure.

National health requirements for sources of salmonid species would address only those disease agents not yet found in Canada, including the following:

- VHSV (European strain)
- IHNV (except Type I)
- *Oncorhynchus masu* virus (OMV)
other filterable replicating viruses causing CPE, which are not yet found in Canada
- *Myxobolus cerebralis* (causative agent of whirling disease).

Health requirements for disease agents endemic to Canada would be developed on a regional or provincial basis. Disease agents of concern might include the following:
- IHNV (Type I)
- IPNV
- *Ceratomyxa shasta* (causative agent of ceratomyxosis)
- *Aeromonas salmonicida* (causative agent of furunculosis)
- *Yersinia ruckeri* (causative agent of ERM)
- *Renibacterium salmoninarum* (causative agent of BKD).

These proposed requirements for sources of salmonids are significantly different from the current FHPR, where a single standard applies to all imports and interprovincial transfers. As health requirements could differ between regions or provinces in Canada, this approach accommodates the different fish health concerns in individual regions and provinces.

In the amended FHPR, sources of surface-disinfected salmonid eggs need only be inspected for viral pathogens, and for bacteria which are known to occur within the egg membrane. This requirement would reduce the cost of inspections, as tests for pathogens such as *A. salmonicida, Y. ruckeri, M. cerebralis* and *C. shasta* would be eliminated.

Live salmonid fish from sources outside the United States of America (USA) would not be permitted entry into Canada under the amended FHPR. Importation of live fish from sources in the USA would only be permitted from regions which have fish health protection measures equivalent to those in Canada, and where the recipient region/province in Canada approves the transfer. These proposed controls reflect the concern that live fish pose a greater risk of transferring disease agents than any other life stages or products. There are few management measures which eliminate pathogens of concern from live fish, and better sampling and diagnostic methods are needed to ensure that these pathogens are absent.

Health requirements in the amended FHPR for sources of non-salmonid species would be determined on a case-by-case basis, depending on the species to be imported. The guiding principle would be that the importation or inter-provincial transfer of non-salmonid species must not result in the introduction of a new pathogen to the receiving province.

Unlike the current FHPR, the detection of a named disease agent (to be called a Reportable Disease Agent in the amended FHPR) at a source facility would not automatically disqualify that source from exporting eggs or fish to Canada or between provinces. A Local Fish Health Officer could issue an Import Licence, unless the proposed importation were liable to result in the introduction of a disease agent not already known to occur in the receiving province. Hence shipments would be permitted between facilities of equal health status (i.e. both have the same disease profile), especially if the serotypes of the disease agents present are the same.
The term 'Fish Health Certificate' in the current FHPR will be changed to 'Pathogen Status Report'. The word 'Certificate' is interpreted by some to imply a guarantee that disease agents are absent. Such a guarantee cannot be offered with existing sampling and diagnostic procedures. A Pathogen Status Report in the amended FHPR will indicate the disease agents for which tests were conducted, and whether or not they were detected using procedures described in the Manual of Compliance.

Mandatory reporting of disease agents in Canada will be a new requirement in the amended FHPR. There is general agreement that diseases not yet detected in Canada, or detected for the first time in a province, should be reported through Local Fish Health Officers to the National Registry of Fish Diseases. However, some fish health administrators would like to be notified when any Reportable Disease Agent is detected. Aquaculturists are only likely to agree to this if compensation is paid, should they have to eradicate stocks as a result of reporting endemic disease agents. This issue still remains to be resolved.

In the amended FHPR, new powers would be provided to the DFO Minister and Regional Directors-General to allow them to respond faster and more effectively during disease emergencies. The Minister could prohibit importations if new disease agents not covered by the Regulations are detected in specific areas of Canada or other countries. Also, Regional Directors-General would be empowered, during emergency fish disease outbreaks in Canada, to collect samples of fish for testing, to require the quarantine or isolation of fish, and to impose control and eradication procedures to prevent further introduction or spread of disease agents. These new powers need to be balanced by providing for an appeal process, and a compensation programme for industry in the event that operators have to destroy stocks or disinfect facilities to eradicate disease agents (see below).

Manual of Compliance

Many of the guidelines provided in the current Manual of Compliance to the FHPR with regard to the roles and responsibilities of administrative and inspecting officials and to the procedures for inspecting facilities and testing for disease agents would remain unchanged in the amended Manual, or would be only slightly modified. Only the proposals for new procedures are described below.

An appeal procedure would be established for persons whose applications to import fish have been rejected. A Review Board would be established to hear the appeal, and to submit recommendations to the DFO Minister. The Minister would make the final decision on the appeal.

The DFO does not have a mechanism to pay compensation under the Fisheries Act. Instead, the Department has proposed to compensate aquaculturists for costs incurred during emergency disease eradication programmes with ex gratia payments. Ex gratia payments cannot be appealed, however, and it is impossible to set cost payment schedules in advance. The aquaculture industry considers it important that government should provide an official compensation programme for fish health protection, which is equivalent to programmes for domestic animal disease control in agriculture.

The National Registrar would administer a National Fish Disease Monitoring Program to establish a national data base on Reportable Disease Agents, and to establish and amend zones considered to be free from Reportable Disease Agents.
The National Registrar would also establish a National Fish Health Protection Program to prevent the introduction of Reportable Disease Agents not yet detected in Canada, and to monitor susceptible fish in Canada for these disease agents.

The National Registrar and Local Fish Health Officers would jointly develop Regional Fish Health Protection Programs to prevent the introduction to new regions of Reportable Disease Agents already known to occur in Canada, and to monitor susceptible fish for Reportable Disease Agents known to occur in Canada.

The Manual of Compliance would contain a new guideline for Fish Health Officials on 'conflicts of interest', e.g. situations where a Fish Health Official has a monetary or other economic investment or interest in a facility being inspected, or where the facility is owned or operated by the Fish Health Official, or by a member of the immediate family of the Fish Health Official.

Definitions and recommended structural and operating standards will be provided for quarantine and isolation facilities. 'Quarantine' is defined, in this context, as the holding or rearing of fish under conditions which prevent the escape or other movement of fish and disease agents, and includes the treatment of effluent from the facility in a manner which will destroy fish pathogens. 'Isolation' is defined as the holding of fish under conditions which prevent the escape or other movement of fish held within the isolation unit. Isolation does not require the treatment of facility effluent.

New National and Regional Emergency Disease Control and Eradication Measures would detail the responsibilities of health officials and administrators during emergency disease outbreaks, as well as the procedures to be followed. The aim is to ensure a coordinated and effective response to the emergency. The private sector has registered concern that no dedicated fund is available for indemnification if fish are destroyed and facilities disinfected during emergencies. This issue still needs to be addressed.

Guidelines would be provided in the Manual of Compliance, with regard to continuity of evidence for collection and transportation of samples, as well as quality assurance/quality control standards for disease testing laboratories. Such guidelines and standards have been absent from the Canadian fish health manual, with regulators relying on inspection officials to develop their own procedures. This approach is no longer acceptable, in view of the impact which inspection results can have on the business of aquaculture operations.

**DISCUSSION**

The current FHPR, which are widely recognized internationally for their high standards, have served Canada well since their implementation in 1977. They have been effective in preventing the introduction, through transfers of eggs and fish approved under the FHPR, of salmonid disease agents previously undetected in Canada and in confining salmonid pathogens known to occur in Canada within limited geographical areas (2). Annual importations approved under the FHPR have ranged from four to ten million eggs and two to four million juvenile fish, and interprovincial transfers now average four million eggs and one million juvenile fish annually (unpublished data from reports by Local Fish Health Officers).

The FHPR have been widely accepted by DFO regional offices and provincial fisheries management agencies, especially as the focus on province-by-province
administration fosters decision-making at the local level. In addition, costs for administering the FHPR remain low.

The fisheries and aquaculture industries have benefited from the knowledge that there is minimal risk under the FHPR of introducing infectious disease agents through shipments from other provinces or countries. Rigorous protection against the introduction and transfer of infectious disease agents was also a factor in encouraging new investments in salmonid aquaculture during the early stages of development of the industry. Efforts should now be made to ensure that the industry is not unnecessarily constrained by these fish health protection measures.

Members of the aquaculture industry in Canada have expressed concern over certain restrictions and limitations in the current FHPR. Some of these concerns— including support for use of the zoning concept, for the application of the FHPR to all finfish species, and for reduced inspection requirements (e.g. for salmonid egg sources) — would be addressed in the proposed amendments to the FHPR and Manual of Compliance. Other concerns, such as the availability of a fund to indemnify private aquaculturists for costs incurred as a result of disease eradication and control programmes, have not yet been addressed. Industry wants specific funds to be set aside for this type of compensation, to offset the potentially high economic risk of the government ordering stock destruction and disease control measures.

The development of enhanced quality assurance/quality control guidelines for laboratories testing fish under the FHPR has been identified as a priority. Test results can have a significant impact on aquaculture businesses and wild fisheries resources, and results must therefore be reliable. The DFO intends to prepare more detailed procedures for sampling and laboratory testing, which minimize errors and variation between laboratories, and to begin monitoring the performance of laboratories.

The current FHPR are consistent with international trade standards in that they apply equally to both imported and inter-provincial shipments of salmonids. They should continue to be based on risk management, not zero tolerance.

Significant differences exist between regions/provinces in Canada in the perception of the risk of transferring diseases, in the distribution of diseases, and in the economic importance of fisheries resources. These factors make it difficult to maintain the current uniformity of health regulations across the country. If regions or provinces develop different fish health requirements for endemic pathogens, as suggested in the amended FHPR, they must ensure that requirements remain consistent with international standards. For example, a region/province should only require inspection for a pathogen which exists in that zone if an official control programme exists for that specific pathogen.

The Canadian system of approving Fish Health Officials in other countries to inspect facilities and issue Fish Health Certificates under the current FHPR reflects a pragmatic approach. When the FHPR were first implemented, fish health protection was not a major issue in many countries, and the necessary expertise in fish disease diagnosis was not always available to governments. The Canadian authorities therefore chose to approve individuals with the required education, expertise and facilities as Fish Health Officials in other countries, regardless of their affiliation. This system has worked well, and the intention is to continue with it in the future.

Under the Fisheries Act, the DFO does not have the authority to monitor or control (from a fish health perspective) exports of fish or fish products to other countries. For
countries requiring that only Canadian government officials issue health reports on source facilities, attempts will be made to negotiate the acceptance of all health inspectors approved by Canada, regardless of whether or not they are government officials.

The FHPR represent only one of many measures in Canada which are designed to protect the health of finfish resources. Provincial and regional policies and regulations exist, which enhance fish health protection under the FHPR, and other federal agencies have regulations which apply to the manufacture, importation and sale of biologials and fish feeds, and to the use of drugs and pesticides (2). Canada is also fortunate in having a range of research and technical expertise available in the fish health field, to ensure that knowledge in disease prevention, control and eradication continues to advance in this country.

International and inter-regional transfers of eggs and live fish can have genetic and ecological impacts on fisheries resources, as well as possibly resulting in the transfer of disease agents (5). The DFO has regulations and policies in place which take account of genetic and ecological concerns, but these are separate from the FHPR. In the long term, it would be beneficial to integrate fish health regulations with other regulations, so that all concerns can be addressed under one set of legislative rules.

ACKNOWLEDGEMENTS

The author offers sincere thanks to members of the Technical Committee (Finfish) and the Working Group on Sampling and Diagnostic Procedures, who have devoted considerable time and effort to preparing the proposed amendments to the FHPR and Manual of Compliance which are presented in this paper.

Thanks are also due to I.M. Price for her consistent and strong support for the fish health protection initiatives of the DFO, and for her help in reviewing this paper. The author also thanks Dr G.R. Johnson for his valuable comments on the manuscript.

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RÉGLEMENTATION SANITAIRE DU CANADA APPLICABLE AUX POISSONS. – T.G. Carey.

Résumé : Au Canada, la réglementation sanitaire applicable aux poissons (Fish Health Protection Regulations ou FHPR) a été mise en œuvre dans le cadre de la Loi sur la pêche de 1977. Cette réglementation vise à contrôler les déplacements de poissons et d’œufs pouvant transmettre des maladies infectieuses graves. Les établissements d’origine doivent justifier des inspections effectuées afin de démontrer l’absence de maladies et d’agents pathogènes donnés.

Depuis la mise en œuvre des FHPR, les autorités responsables n’ont décelé aucun agent pathogène dangereux qui aurait pu être transféré avec des cargaisons d’œufs et de poissons agréées aux termes de cette réglementation. Celle-ci doit néanmoins être modifiée pour les raisons suivantes :

– elle doit intégrer les nouvelles connaissances sur les maladies des salmonidés et sur leur répartition ;
elle doit couvrir les transferts d’autres espèces présentant un risque d’introduction ou de propagation d’agents pathogènes au Canada ou d’une province à l’autre ;
— les contrôles superflus doivent être supprimés ;
— de nouveaux services assurant une protection sanitaire efficace des ressources halieutiques doivent être créés ;
— la réglementation nationale doit désormais tenir compte des nouvelles normes internationales.

L’auteur indique quelles sont les autorités compétentes et les administrations responsables, les conditions et procédures en vigueur dans le cadre de la réglementation actuelle. Il décrit aussi le « Manuel d’application » correspondant et les projets d’amendement à apporter à la réglementation et à ce Manuel.

Il traite également des questions relatives à la protection sanitaire des poissons au Canada, et notamment :
— des préoccupations exprimées par le secteur professionnel quant aux FHPR ;
— de la nécessité d’élaborer des directives sur le contrôle de qualité et les garanties de qualité pour les laboratoires de diagnostic ;
— de la conformité aux normes commerciales internationales ;
— de la nécessité de prendre en considération tant les facteurs génétiques et écologiques que la santé des poissons au moment d’évaluer l’incidence des introductions et des transferts de poissons.


REGLAMENTO SANITARIO PISCÍCOLA EN CANADÁ. – T.G. Carey.

Resumen: El Reglamento de Protección Sanitaria Piscícola (Fish Health Protection Regulations: FHPR) entró en vigor en Canadá con la promulgación de la Ley Pesquera de 1977. Este conjunto legislativo se basa en el principio de controlar el movimiento de peces y huevos susceptibles de ser portadores de enfermedades infecciosas de importancia. Las instalaciones de origen de los productos deben presentar una serie de certificados de inspección, establecidos a lo largo de cierto período, para demostrar la ausencia de determinadas enfermedades y agentes patógenos.

Desde que el FHPR entró en vigor no se ha tenido conocimiento de la propagación de ningún agente patógeno de importancia con los cargamentos de huevos y peces cuya introducción fue aprobada de acuerdo con este reglamento. Ello no obstante, esta normativa requiere ciertas modificaciones que permitan dar respuesta a las siguientes necesidades:
— incorporar al reglamento los nuevos conocimientos sobre las enfermedades de los salmónidos y su distribución;
— ampliar el dispositivo para cubrir los movimientos de otras especies piscícolas que presentan el riesgo de introducir y propagar agentes patógenos infecciosos al interior de Canadá o entre distintas provincias;
— eliminar los controles superfluos;
— especificar los nuevos servicios necesarios para garantizar una protección sanitaria eficaz de los recursos piscícolas;
— incorporar las nuevas normas internacionales.

El autor describe el organismo responsable de la administración, requisitos y procedimientos que impone el actual FHP, así como el correspondiente «Manual de cumplimiento» y las enmiendas propuestas tanto al Reglamento como al Manual.

Se examinan también otras cuestiones ligadas a la protección sanitaria piscícola en Canadá, entre ellas las siguientes:
— temas relativos al FHP que preocupan a la industria;
— necesidad de directrices de garantía de calidad y control de calidad para los laboratorios de diagnóstico;
— conformidad con las normas que rigen para el comercio internacional;
— necesidad de tomar en consideración, además de los aspectos de sanidad, los factores genéticos y ecológicos en el momento de evaluar el impacto de la introducción y movimiento de especies acuáticas.


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REFERENCES


